INTERNATIONAL STANDARD

ISO 6519

Second edition
1993-06-01

Diesel engines — Fuel injection pumps — Tapers for shaft ends and hubs

Moteurs diesels — Pompes d'injection de combustible — Cônes pour bouts d'arbre et moyeux

Reference number
ISO 6519:1993(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 6519 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Sub-Committee SC 7, *Injection equipment and filters for use on road vehicles*.

This second edition cancels and replaces the first edition (ISO 6519:1980). The nominal shaft diameter, *A*, of 23 mm in tables 1 and 2 is new.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland
Printed in Switzerland

Diesel engines — Fuel injection pumps — Tapers for shaft ends and hubs

1 Scope

This International Standard specifies the dimensions necessary for interchangeability of tapered shaft ends and hubs of fuel injection pumps for diesel (compression-ignition) engines.

NOTE 1 These tapered shaft ends and hubs may also be used for other applications without woodruff keys where no specific standards exist.

2 Dimensions and tolerances

To ensure satisfactory operation of the taper drive, it is necessary for manufacturers to provide such cone angle tolerances that the contact between the male and female cones commences at the major diameter.

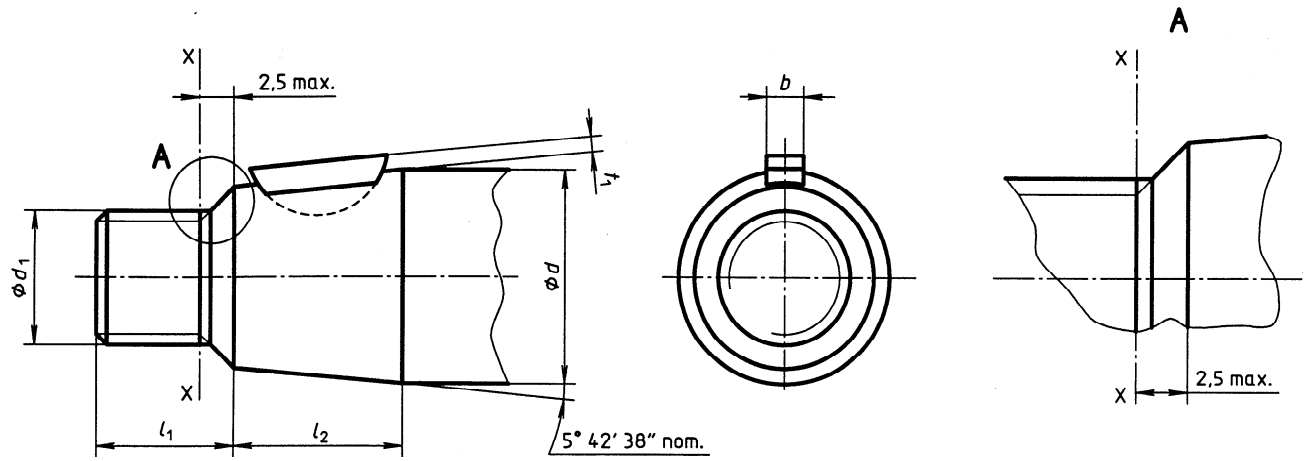
2.1 Shaft ends with taper

Shaft ends shall be as shown in figure 1 and table 1. The shaft ends may be made optionally according to type 1 or 2. However, it shall be possible to screw the go-gauge for the thread up to the XX line.

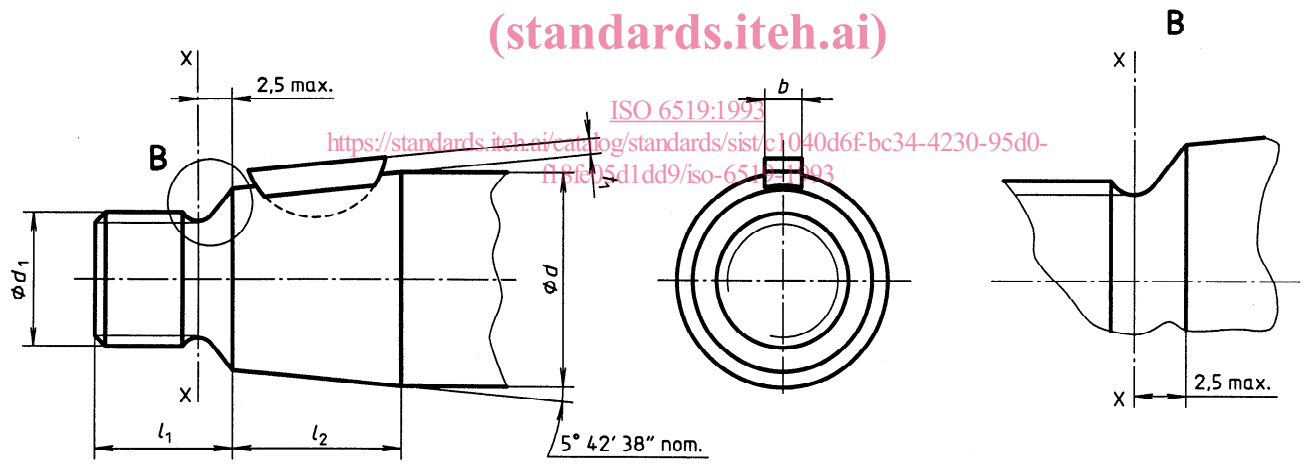
2.2 Keyways of hub with taper

Hub keyways shall be as shown in figure 2 and table 2. The length of the hub cone shall be such that, after assembling, the face at the smaller diameter of the hub cone lies so far in front of the XX line (see figures 1 and 2) that the fixing nut can be correctly screwed up.

Dimensions in millimetres



a) Type 1



b) Type 2

Figure 1 — Shaft ends

Table 1 — Shaft ends

Dimensions in millimetres

d [1] nom.	d_1	l_1 max.	l_2 $^{0}_{-1}$	t_1 max.	b (h9)
17	M12	14,5	18	1,6	3 $^{0}_{-0,025}$
20	M14 × 1,5	16,5	20	2	4 $^{0}_{-0,03}$
22	M14 × 1,5 M16 × 1,5 [2]	16,5 18	20	2	4 $^{0}_{-0,03}$
23	M16 × 1,5	18	23	2	4 $^{0}_{-0,03}$
25	M18 × 1,5	20	25	2,6	5 $^{0}_{-0,03}$
30	M20 × 1,5	23	30	2,6	5 $^{0}_{-0,03}$
35	M24 × 1,5	27	35	2,6	5 $^{0}_{-0,03}$

1) The tolerance for dimension d depends on the type of shaft bearing.

2) The thread M16 × 1,5 is preferred for shaft ends with 22 mm diameter.

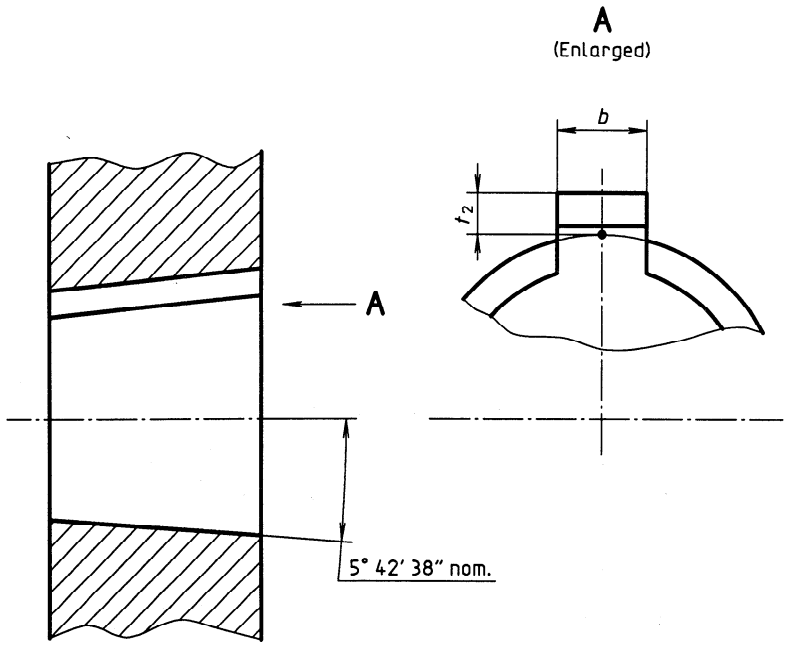


Figure 2 — Hub

Table 2 — Hub

Dimensions in millimetres

d [1] nom.	t_2 min.	b (D10)
17	1,8	$3\ ^{+0,06}_{+0,02}$
20	2,2	$4\ ^{+0,078}_{+0,030}$
22	2,2	$4\ ^{+0,078}_{+0,030}$
23	2,2	$4\ ^{+0,078}_{+0,030}$
25	2,8	$5\ ^{+0,078}_{+0,030}$
30	2,8	$5\ ^{+0,078}_{+0,030}$
35	2,8	$5\ ^{+0,078}_{+0,030}$

1) d is the nominal diameter of the shaft.

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UDC 621.824.4:621.43.038.5

Descriptors: diesel engines, fuel pumps, injection pumps, shaft ends, hubs, taper, dimensions, dimensional tolerances, angular tolerances, interchangeability.

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